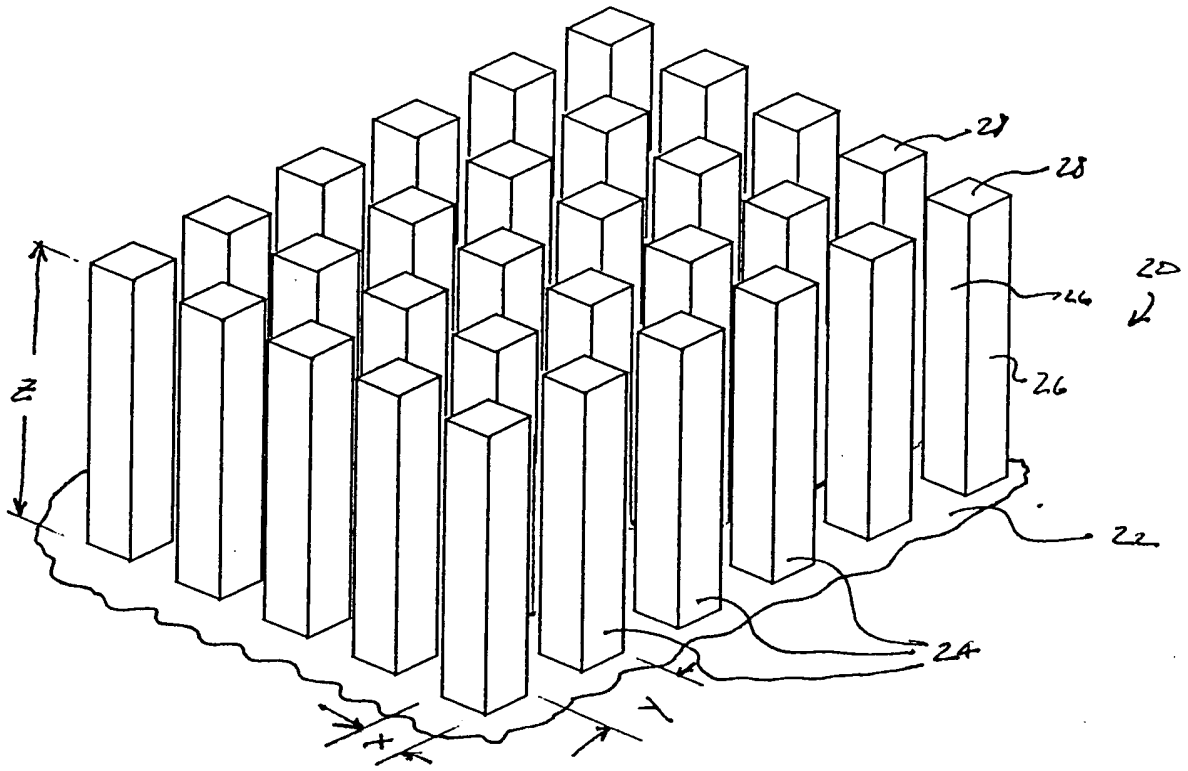

Fig. 1

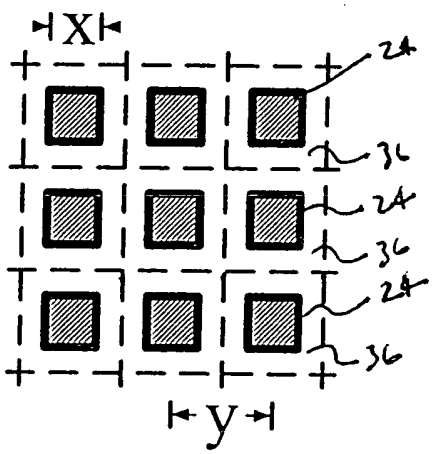

Fig. 2

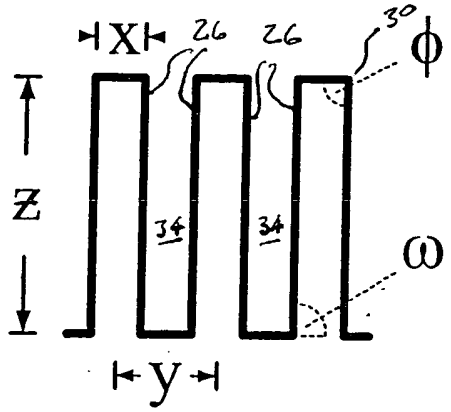

Fig. 3

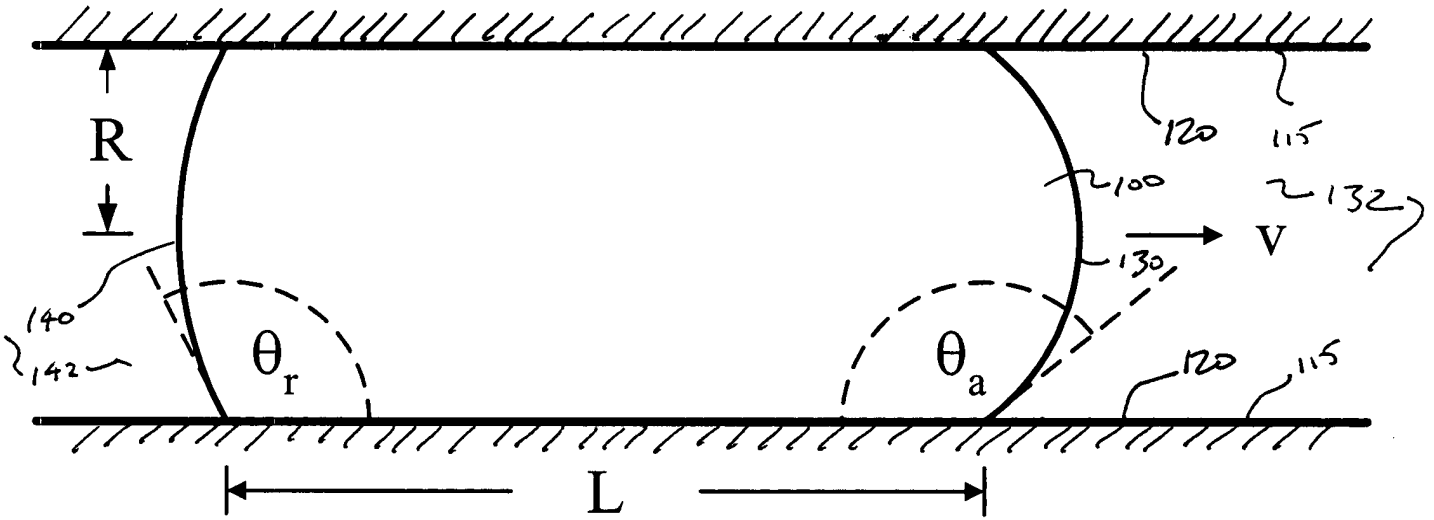

Fig. 1a

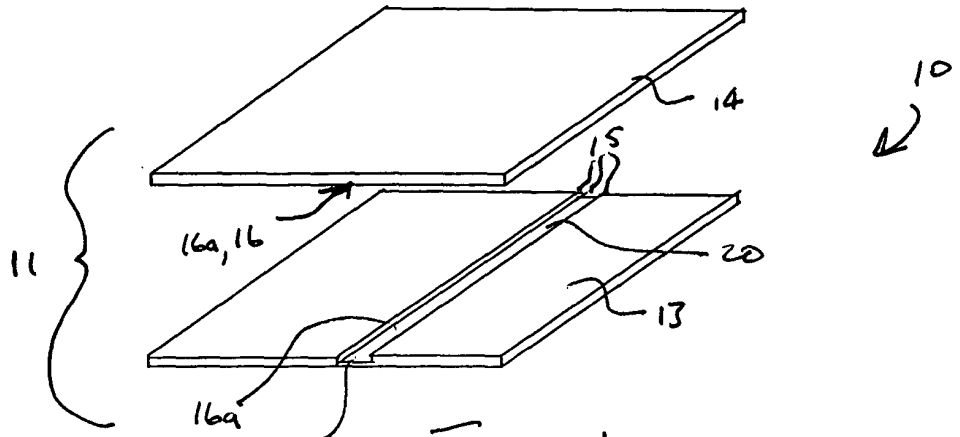

Fig. 1b

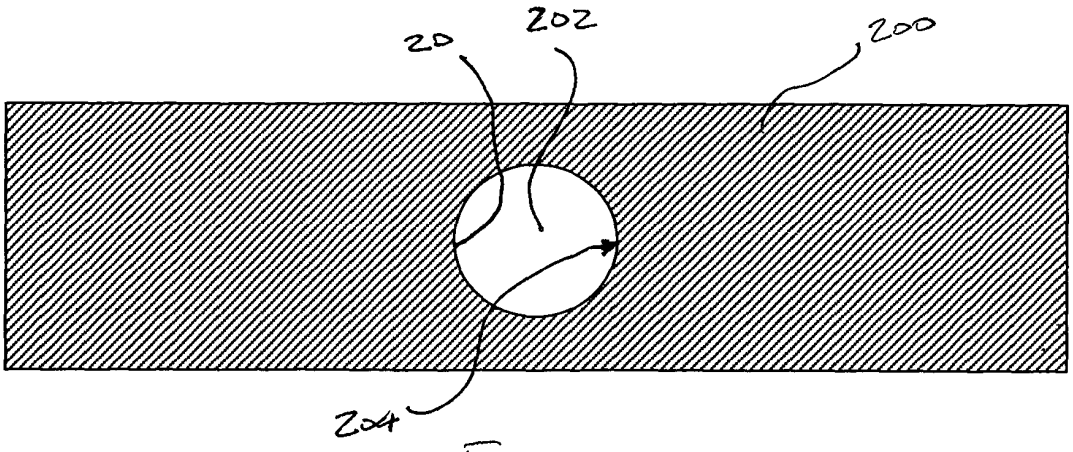

Fig. 1c

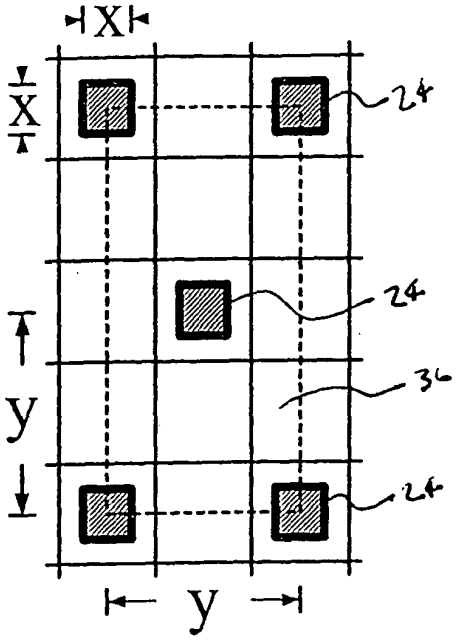

Fig. 4

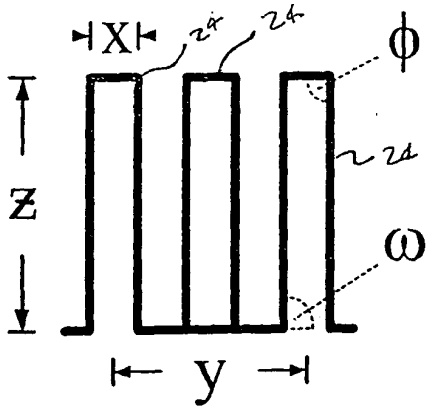

Fig. 5

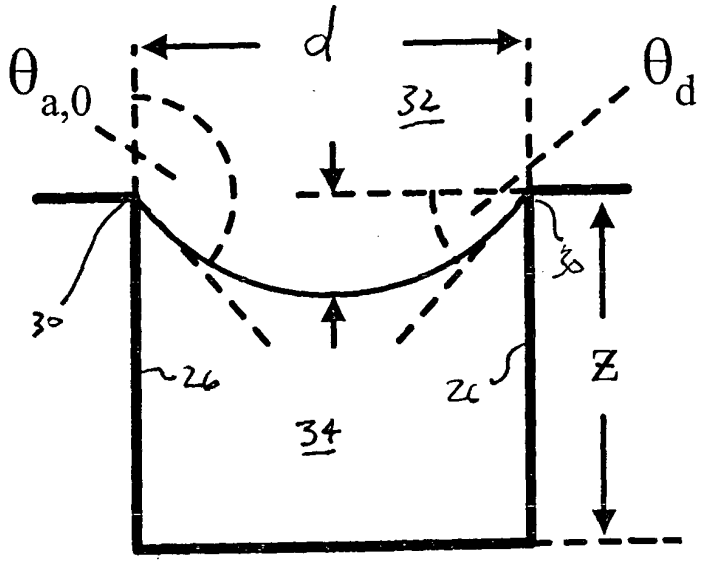

Fig. 6

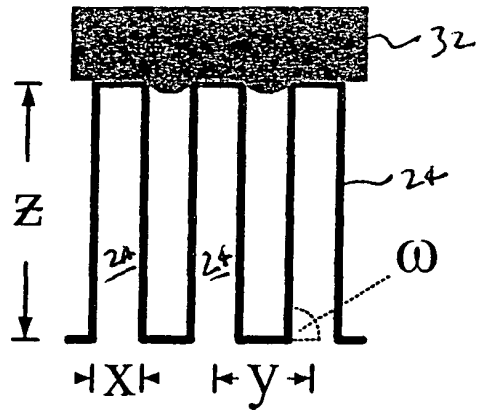

Fig. 7

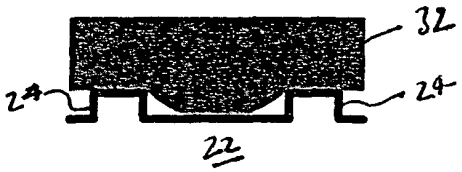

Fig. 8

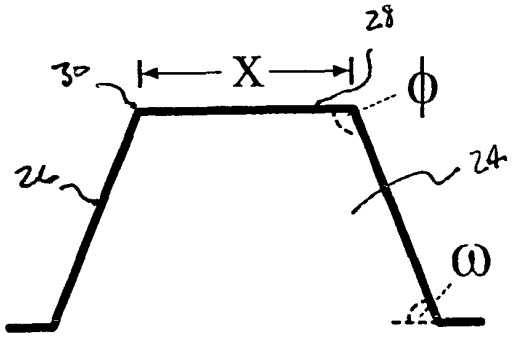

Fig. 9

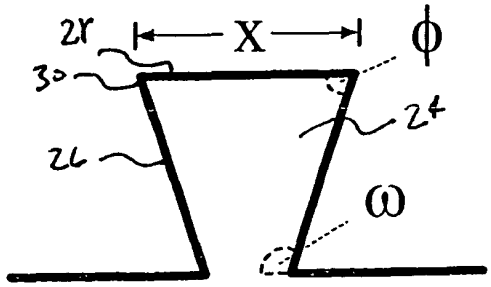

Fig. 10

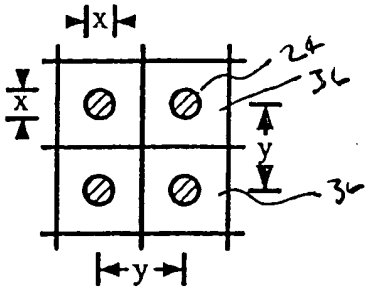

Fig. 11

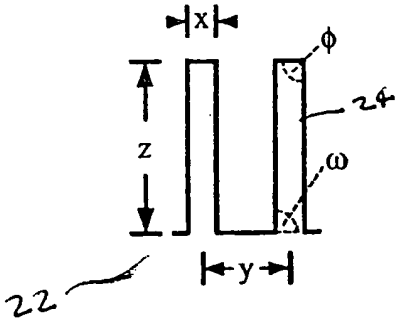

Fig. 12

Contact Line Density (Λ) and Linear Fraction of Contact Along Asperities (λ_p)		
Geometry	**Λ**	**λ_p**
Hexagonal Array of Square Posts	$\frac{4x}{y^2}$	$\frac{(x/y)}{\left\{\left[5/4-2(x/y)+(x/y)^2\right]^{1/2}+x/y\right\}}$
Rectangular Array of Square Posts	$\frac{4x}{y^2}$	$\frac{x}{y}$
Rectangular Array of Cylindrical Posts	$\frac{\pi x}{y^2}$	$(1-x/y)\left[1+(1/2\pi-1)(x/y)\right]$
Parallel Ridges	$\frac{2}{y}$	$\frac{x}{y}$

Fig. 13

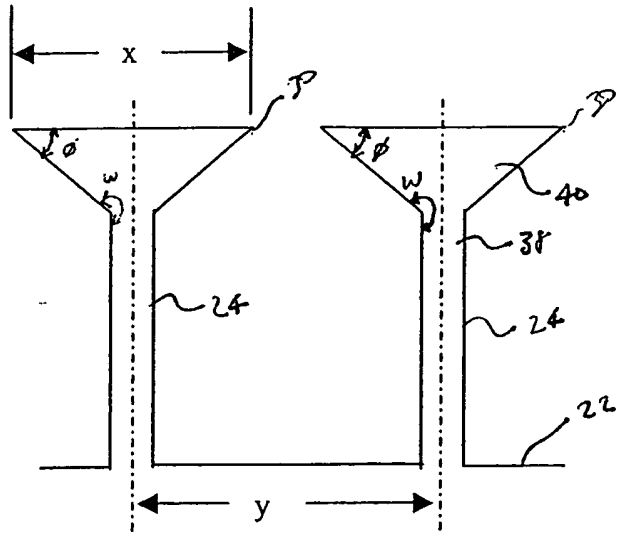

FIG. 14

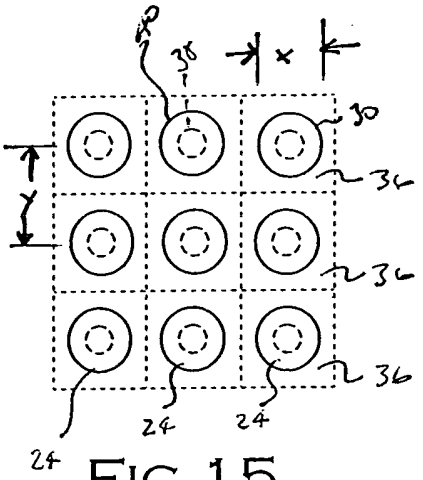

FIG. 15

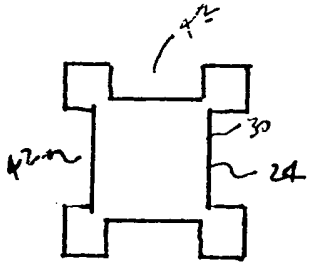

Fig. 16

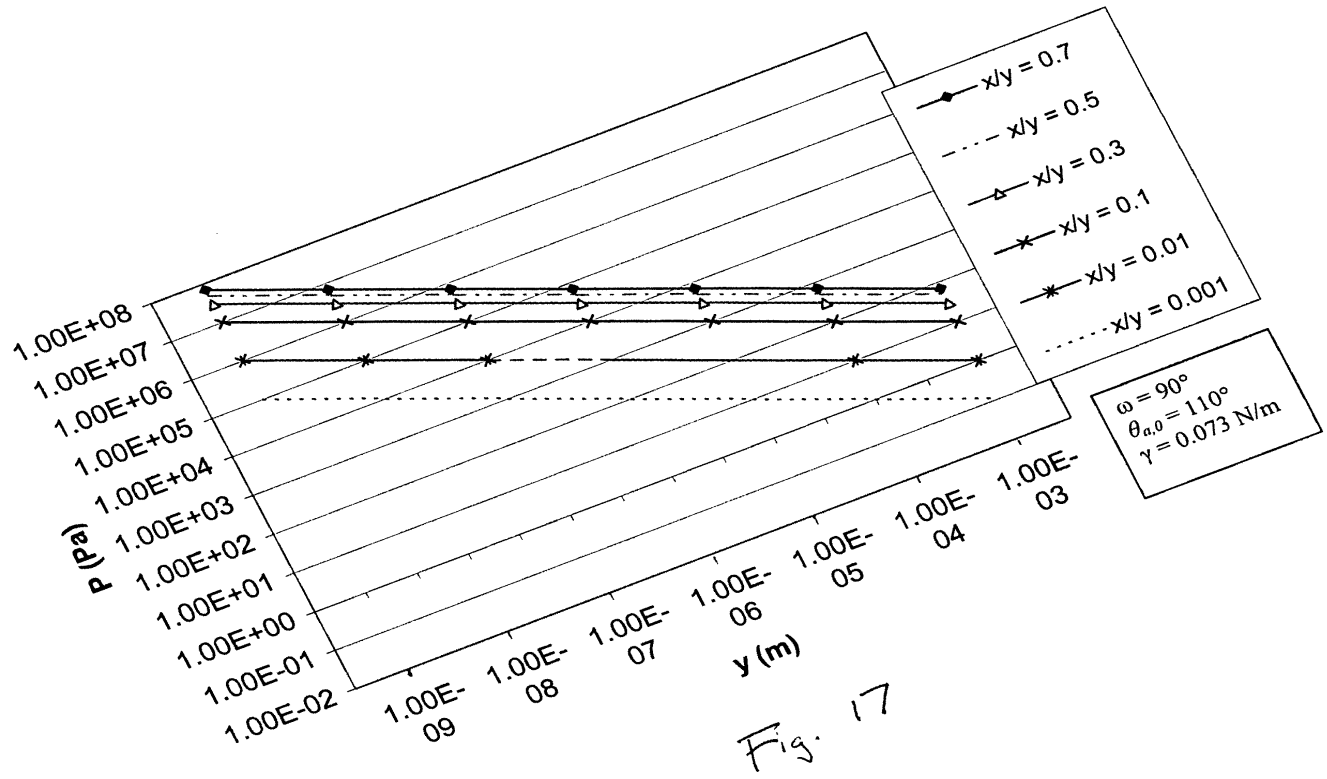
p (Pa)
1.00E+08
1.00E+07
1.00E+06
1.00E+05
1.00E+04
1.00E+03
1.00E+02
1.00E+01
1.00E+00
1.00E-01
1.00E-02
y (m)
1.00E-09
1.00E-08
1.00E-07
1.00E-06
1.00E-05
1.00E-04
1.00E-03
x/y = 0.7
x/y = 0.5
x/y = 0.3
x/y = 0.1
x/y = 0.01
x/y = 0.001
ω = 90°
θa,0 = 110°
γ = 0.073 N/m

Fig. 17